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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/582,010

10/15/2008

Lorenz Ratke

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EXAMINER

WANG, CHUN CHENG

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

08/18/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/582,010	<b>Applicant(s)</b> RATKE ET AL.	
	<b>Examiner</b> Chun-Cheng Wang	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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### DETAILED ACTION

1. This office action is in response to the Amendment filed on 05/18/2009. Claim 8 has been cancelled. Claims 1-7 are now pending.

#### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Field et al. (US 20040077738) in view of Lorenz et al. (EP 1077097).

Claim 1: Field et al. disclose an insulation composite comprising aerogel-hollow particle binder composition (Abstract). The insulation composite and aerogel-hollow particle binder composition can be molded to provide insulation articles such as tiles, panels, or various shaped articles ([0041]). The insulation base layer has a thermal conductivity of about 35 mW/(m·K) (read on claims 1 and 4), after drying ([0020]). Suitable hydrophobic aerogel particles include

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organic aerogel particles, such as resorcinol-formaldehyde or melamine-formaldehyde aerogel particles ([0007])

Field et al. is silent on specific carbon aerogel molded part.

Lorenz et al. '097 disclose resorcinol-formaldehyde aerogel molded part [0012] in which the plastic aerogel can be converted to carbon aerogel in vacuum or protective gas with temperature above 1000°C (e.g. pyrolysis) [0004]. The carbon aerogels have extreme small effective thermal conductivities and are significant light (motivation) [0004].

In light of such benefits, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to pyrolyze the resorcinol-formaldehyde aerogel to have significant lighter molded part.

Claim 2: Field et al. further disclose suitable hydrophobic aerogel particles, which include resorcinol-formaldehyde aerogel particles and silica aerogels, can be combined ([0007]).

Claims 3 and 4: Field et al. further disclose suitable hollow, non-porous particles include Scotchlite™ glass microspheres, which has thermal conductivities of less than 0.1 Wm<sup>-1</sup>K<sup>-1</sup>.

Claim 5: Field et al. further a ratio of hydrophobic aerogel particles to hollow, non-porous particles of about 80:20 to about 20:80 (e.g. 20-80% of hollow sphere, read on claim 5) ([0014]) (i.e. the claimed ranges “overlap or lie inside ranges disclosed by the prior art” is a prima facie case of obviousness).

Claim 6: See paragraph [0006].

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Field et al. (US 20040077738) in view of Lorenz et al. (EP 1077097).

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The disclosure of Field et al. is adequately set forth in paragraph 4 and is incorporated herein by reference.

Field et al. also disclose a method for the preparation of an aerogel molded part comprising: a. preparation of a sol; b. mixing the sol with filler; c. gelling of the sol; and d. drying of the gel (see Example 1 and 2). However, Field et al. is silent on pyrolyzing the resultant aerogel molded part.

Lorenz et al. '097 disclose plastic aerogel can be converted to carbon aerogel in vacuum or protective gas with temperature above 1000°C (e.g. pyrolysis) [0004]. The carbon aerogels have extreme small effective thermal conductivities and are significant light (motivation) [0004].

In light of such benefits, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to pyrolyze the plastic aerogel to have significant lighter molded part.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chun-Cheng Wang whose telephone number is (571)270-5459. The examiner can normally be reached on Monday to Friday w/alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ling-Siu Choi/  
Primary Examiner, Art Unit 1796

/Chun-Cheng Wang/  
Examiner, Art Unit 1796

/CCW/